Prediction of Road Accidents in Qatar by 2022

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Abstract : There is growing concern over increasing incidences of road accidents and consequent loss of human life in Qatar. In light to the future planned event in Qatar, World Cup 2022; Qatar should put into consideration the future deaths caused by road accidents, and past trends should be considered to give a reasonable picture of what may happen in the future. Qatar roads should be arranged and paved in a way that accommodate high capacity of the population in that time, since then there will be a huge number of visitors from the world. Qatar should also consider the risk issues of road accidents raised in that period, and plan to maintain high level to safety strategies. According to the increase in the number of road accidents in Qatar from 1995 until 2012, an analysis of elements affecting and causing road accidents will be effectively studied. This paper aims to identify and criticize the factors that have high effect on causing road accidents in the state of Qatar, and predict the total number of road accidents in Qatar 2022. Alternative methods are discussed and the most applicable ones according to the previous researches are selected for further studies. The methods that satisfy the existing case in Qatar were the multiple linear regression model (MLR) and artificial neutral network (ANN). Those methods are analyzed and their findings are compared. We conclude that by using MLR the number of accidents in 2022 will become 355,226 accidents, and by using ANN 216,264 accidents. We conclude that MLR gave better results than ANN because the artificial neutral network doesn't fit data with large range varieties.

Keywords : road safety, prediction, accident, model, Qatar

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